

CLAIMS

1. A composition comprising (i) FCC catalyst particles and (ii) additive particles suitable for the reduction of NO_x emissions from an FCC regenerator, said additive particles comprising:
- 5 a) a Mg and Al-containing anionic clay or solid solution,
b) a rare earth metal oxide,
c) alumina and/or silica-alumina, and
d) Y-type zeolite.
- 10 2. A composition according to claim 1 wherein the additive particles, calculated as oxides and based on the total weight of the additive particles, comprise:
- 15 a) Mg and Al-containing anionic clay in an amount of about 50-65 wt%,
b) CeO₂ in an amount of about 2.5-20 wt%,
c) alumina in an amount of about 20-45 wt%,
d) a REY zeolite in an amount of about 2-10 wt%.
- 20 3. A composition according to claim 2 wherein the additive particles, calculated as oxides and based on the total weight of the additive particles, comprise:
- 25 a) Mg and Al-containing anionic clay or solid solution in an amount of about 50-65 wt.%,
b) CeO₂ in an amount of about 6-12 wt.%,
c) alumina in an amount of about 25-35 wt.%,
d) a REY zeolite in an amount of about 3-8 wt.%.
- 30 4. A composition according to any one of the preceding claims wherein the additive particles additionally contain 2-8 wt% of silica.
5. A composition according to any one of the preceding claims wherein the additive particles additionally comprise Cu.

6. A process for preparing a composition according to any one of the preceding claims, comprising the steps of

- (1) combining an aluminium source and a magnesium source in water to form an aqueous slurry;
- (2) optionally milling the slurry,
- (3) aging the slurry,
- (4) combining a rare earth metal oxide or a precursor thereof with the product of step (3),
- (5) spray-drying the product of step (4),
- (6) calcining the spray-dried material,
- (7) optionally slurrying the product of step (6) in water,
- (8) milling the product of step (6) or (7),
- (9) combining the product of step (6), (7), or (8) with the alumina and/or silica-alumina and the Y-type zeolite,
- (10) shaping the product of step (9) to form additive particles, and
- (11) physically mixing said additive particles with FCC catalyst particles.

7. A process according to claim 6 wherein the aluminium source of step (1) is aluminium trihydrate and the magnesium source is magnesium oxide.

8. A process according to claim 6 or 7 wherein the alumina of step (9) is peptised pseudoboehmite.

9. Use of the composition according to any one of claims 1-5 in an FCC unit.